

## CLAIMS

What is claimed is:

1. A dual band radio receiver comprising:  
a local oscillator configured to generate a Local Oscillator (LO) signal;  
3 a first mixer device configured to receive said LO signal and a first Radio  
4 Frequency (RF) signal included within a first band and responsively to output a first  
5 Intermediate Frequency (IF) signal;

6 a second mixer device configured to receive said LO signal and a second RF  
7 signal included within a second band and responsively to output a second IF signal;  
8 and  
9 wherein said local oscillator is configured to operate within a third band  
10 located between said first and second bands.

1 2. The dual band radio receiver of claim 1 further comprising first and second IF  
2 filters and a switching device coupled thereto, wherein said first and second IF filters  
3 are coupled to said first and second mixer devices respectively.

1 3. The dual band radio receiver of claim 2 further comprising a control circuit  
2 coupled to said local oscillator device and to said switching device.

1 4. The dual band radio receiver of claim 1 wherein said first band is substantially  
2 within approximately a frequency range of 1.910 GHz and 1.930 GHz.

1 5. The dual band radio receiver of claim 1 wherein said second band is  
2 substantially within approximately a frequency range of 2.40 and 2.4835 GHz.

*Sub 1*  
*Alt 2*  
6. The dual band radio receiver of claim 1 wherein said third band is substantially between approximately 2.155 GHz and 2.2385 GHz.

*b*  
1 7. The dual band radio receiver of claim 1 wherein said third band is positioned approximately half-way between said first and second bands.

*sub 1*  
*Alt 2*  
*3*  
8. A system comprising:  
a transmitter circuit; and  
a dual band radio receiver coupled to said transmitter, said dual band radio receiver including  
a local oscillator configured to generate an LO signal;  
a first mixer device configured to receive said LO signal and a first RF signal included within a first band and responsively to output a first IF signal,  
a second mixer device configured to receive said LO signal and a second RF signal included within a second band and responsively to output a second IF signal, and  
wherein said local oscillator is configured to operate within a third band positioned between said first and second bands.

*8*  
1 9. The system of claim 8 further comprising first and second IF filters and a switching device coupled thereto, wherein said first and second IF filters are coupled to said first and second mixer devices respectively.

1 10. The system of claim 9 further comprising a control circuit coupled to said local oscillator device and to said switching device.

*Subj A2*

1 11. The system of claim 8 wherein said first band is substantially within  
2 approximately a frequency range of 1.910 GHz and 1.930 GHz.

1 12. The system of claim 8 wherein said second band is substantially within  
2 approximately a frequency range of 2.40 and 2.4835 GHz.

1 13. The system of claim 8 wherein said third band is substantially between  
2 approximately 2.155 GHz and 2.2385 GHz.

*12 7*  
1 14. The system of claim 8 wherein said third band is positioned approximately  
2 half-way between said first and second bands.

*W D B C D B C D*  
1 15. In a dual-band radio receiver configured to receive Radio Frequency (RF)  
2 signals within first and second bands, a method for converting an RF signal into an  
3 IF signal, the method comprising the steps of:  
4 a) determining whether said RF signal belongs to one of a first and a second  
5 bands; and  
6 b) if said RF signal belongs to one of said first and second bands generating said  
7 IF signal by mixing said RF signal with a LO signal belonging to a third band located  
8 between said first and second bands.

*9 14 13*  
10 16. The method of claim 15 wherein said step b) includes the step of:  
11 if said RF signal belongs to said first band, driving said RF signal and said LO  
12 signal to a first mixer device.  
13  
14

16 15. The method of claim 15 wherein said step b) includes the step of,  
17 if said RF signal belongs to said second band, driving said RF signal and said  
18 LO signal to a second mixer device.

19 16. 13. The method of claim 15 wherein said third level is substantially half-way  
1 between said first and second bands.

Sub  
P3  
3  
1 19. The method of claim 15 wherein said first band is substantially within  
2 approximately a frequency range of 1.910 and 1.930 GHz.  
3

1 20. The method of claim 15 wherein said second band is substantially within  
2 approximately a frequency range of 2.40 and 2.4835.

1 21. A method for providing a dual band radio receiver, the method comprising  
2 the steps:  
3

3 providing first and second mixers;  
4 providing a circuit configured to determine whether an RF signal input  
5 thereto belongs to one of a first and second bands, said circuit coupling said RF  
6 signal to one of said first and second mixers if said circuit determines that the RF  
7 signal belongs to one of a first and second bands respectively; and  
8 coupling a local oscillator to said first and second mixers, said local oscillator  
9 configured to generate signals within a third band that is positioned approximately  
10 mid-way between said first and second bands.

ADD  
A4